GLONASS RETROREFLECTOR SYSTEMS

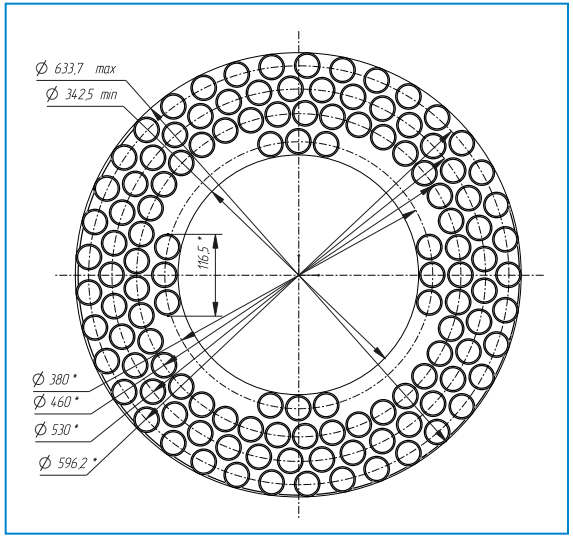
GLONASS retroreflector systems

GLONASS-M

112 items

ORAS

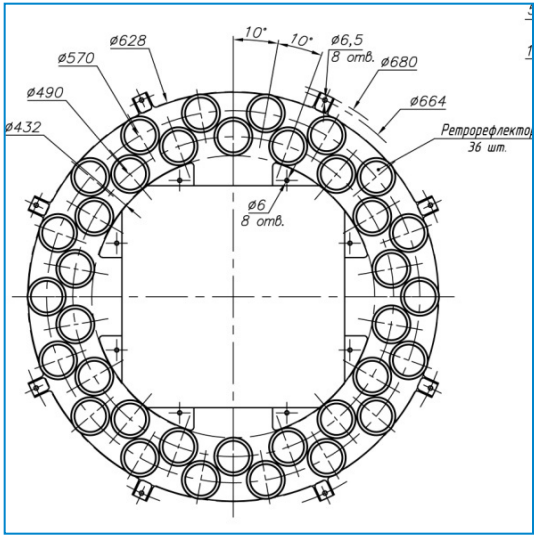
GLONASS-K1



123 items

ORAS-K

GLONASS-K2



36 items

ARS

Annular retroreflector system (ARS) for GLONASS-K2

Methods of efficiency improvement

Goal	Technical solution
1,5-times increase of equivalent surface of scattering to the value of 180 millions m^2	Increased retroreflector (size of the apperture is 42 – 48 mm) with «two-spot» chart, oriented in the range of ARS
Decrease of the range measurement error (RMS of a single range measurement < 8 mm)	Two separate signals coming from two retroreflectors at the opposite sides of ARS
Decrease of the Sun heating that influences the RS characteristics	Interferencial dielectric coverings

Chart optimization

Chart for the single laser retroreflector (LR) of the full inner reflection type (with no edges covered)

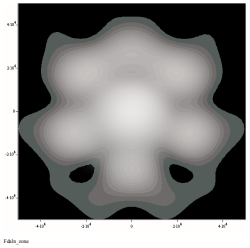


Chart of the «two-spot» LR with the interferencial edge covering

2A

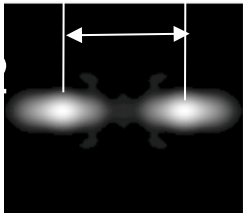


Chart of the full inner reflection LR panel

A

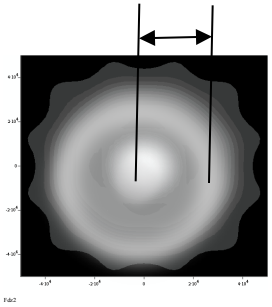
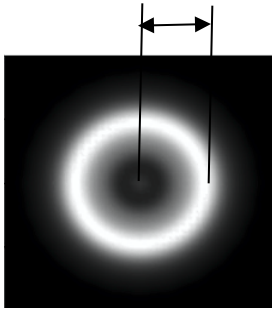


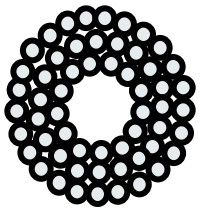
Chart of the «two-spot» LR panel

A

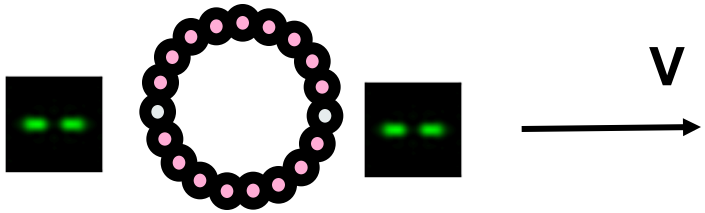


Decrease of the «target error», caused by inclined light incidence during the transition to ARS

K1



K2



Pulse duration = 50 ps

Angle of incidence	$\theta = 0^o$	$\theta = 5^o$	$\theta = 10^o$	$\theta = 15^o$
RMS of a sing. measur.	6 mm	18 mm	34 mm	51 mm

Angle of incidence	$\theta = 0^o$	$\theta = 5^o$	$\theta = 10^o$	$\theta = 15^o$
RMS of a sing. measur.	6 mm	8 mm	8 mm	8 mm